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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of Chaudhari, et al.

Serial No.: 09/716,706

Group No.: 1621

Filed: November 20, 2000

Examiner: Price, E.

For: NOBLE METAL CONTAINING HYDROGENATION
CATALYST FOR SELECTIVE HYDROGENATION OF 1, 4
BUTYNEDIOL TO 1, 4 BUTENEDIOL, AND A PROCESS FOR
THE PREPARATION THEREOF

Attorney Docket No.: U 013054-6

Assistant Commissioner for Patents
Washington, D.C. 20231

RESPONSE TO THE OFFICE ACTION

Remarks

The Office Action of October 26, 2001 has been carefully considered and reconsideration of the application is respectfully requested.

Claims 1-11 are pending in the application. Claims 2-11 are withdrawn from consideration. Claim 1 was rejected.

Claim Rejection 35 U.S.C. 103(a)

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over Kaibel et al.

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8a)

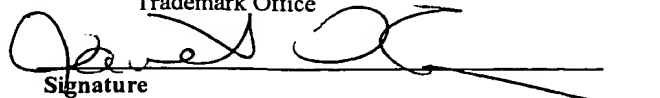
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Date: January 28, 2002

Janet I. Cord
(type or print name of person certifying)

The Examiner alleges that one of ordinary skill in the art would have been motivated, in view of the Kaibel et al. (CA 2260810) teachings, to obtain the catalysts as presently claimed in the present invention.

The present invention relates to a hydrogenation catalyst of the general formula $AB(y)C(z)$ wherein A is a support comprising a salt of a Group II A metal or zeolite, B is a noble metal selected from Pt or Pb, and C is nickel, with the proviso that when $B=Pt$, $z=0$. The amount of Pt or Pd content in the catalyst of the present invention is 0.2 to 10% and the amount of nickel is 0-15%.

In the specification, a use of the catalyst is described. The catalyst as defined in claim 1 may be used to selectively hydrogenate 1,4-butyne-1,3-diol to obtain 1,4-butanediol, i.e. reducing a triple bond to a double bond. The Tables in Examples 10 and 11 on page 9 of the specification show that the catalyst of the present invention has complete selectivity to 1,4-butanediol with yields in the range of 98 to 100%.

Kaibel et al. describe a catalyst in the form ABCD where A is an inert support selected from aluminum oxide, titanium oxide, zirconium oxide, silicon oxide, clays, zeolites, and activated carbon, B comprises one or more elements selected from transition groups I, VI, VII and VIII of the Periodic Table, C is an element selected from Group II, III, IV and V, and D is a lanthanide element used as promoter. The metal content in Kaibel et al. is in the range of 0.01 to 100%.

Development of a specific catalyst is essential in order to achieve complete selectivity for a particular product.

The catalyst described in Kaibel et al. is capable of reducing a C-C triple and/or double bond to a single bond to produce 1,4-butanediol and does not selectively produce butenediol. There is no suggestion in Kaibel et al. that the catalyst they describe can produce a carbon-carbon double bond from a carbon-carbon triple bond. Kaibel et al. discloses only that the catalyst reduces a carbon-carbon triple or double bond to a carbon-

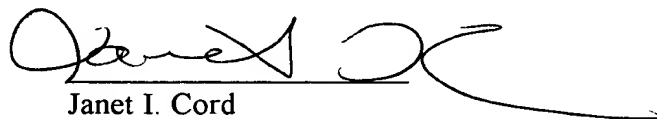
carbon single bond.

Furthermore, there is no teaching or suggestion in Kaibel et al. that the content of the metals would be within the defined ratios as described in the present invention, these being an amount of Pt or Pd is 0.2 to 10% and the amount of nickel being 0-15%.

Therefore, one of ordinary skill in the art would not have been motivated in view of Kaibel et al. to obtain the catalyst of the present invention.

In light of the above, Applicants submit that all rejections of record have been overcome. Applicants accordingly submit that the application is now in condition for allowance and respectfully request action in accordance therewith.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Janet I. Cord", written over a horizontal line.

Janet I. Cord
LADAS & PARRY
26 West 61st Street
New York, NY 10023
Reg. No. 33778 (212) 708-1935